**What is claim d is**:

1. A method for storing and processing physiological data in a medical recording device having continuous data collection and data storage of such data in multiple time-resolved tiers, comprising:

sampling one or more physiological signals at a selected sampling rate;

deriving physiological parameter values from the sampled signal;

storing the parameter values as they are determined in a temporary memory buffer for a predetermined storage interval;

determining a statistical aspect of the stored parameter values upon expiration of the storage interval; and

writing the statistical aspect to a long-term memory buffer.

2. A method according to claim 1, wherein the long-term memory buffer comprises at least two long-term memory buffers, and further comprising:

designating a unique temporal resolution to one of the at least two long-term memory buffers.

3. A method according to claim 2, wherein the temporal resolution of one long-term memory buffer is determined by the predetermined storage interval.

4. A method according to claim 2, wherein the at least two long-term memory buffers comprise digital memory buffers.

5. A method according to claim 1, wherein the one or more physiologic signals comprise: an electrical signal related to tissue impedance, a blood pressure sensor signal, an intracardiac pressure signal, a flow sensor signal, a temperature signal, an accelerometer signal, a biochemical sensor signal.

6. A method according to claim 5, further comprising calculating a mathematical derivative, a mathematical integral or a percentile value of the one or more physiologic signals or the stored parameters.

7. A method according to claim 1, further comprising performing said method based upon at least one of: a manually triggered event, a periodic event, an aperiodic event, a time of day, an automatically triggered event.

8. A method according to claim 7, wherein said manually triggered event comprises a manually-triggered telemetric method-initiation signal.

9. A method according to claim 2, wherein the unique temporal resolution comprises at least a one of: a coarse resolution, a medium resolution, and a fine resolution.

10. A method according to claim 1, wherein in the event that during performance of the step of writing the statistical aspect to a long-term memory buffer said memory buffer capacity is exceeded, then

over-writing a portion of the previously-recorded statistical aspect.

11. A method according to claim 10, wherein the portion comprises the least recent portion of previously-recorded statistical aspect.

12. A method according to claim 2, wherein upon expiration of a predetermined storage interval or upon exceeding available memory storage of a given long-term storage buffer the following step is performed:

transferring a set of data comprising the statistical aspect or the stored parameter values from a relatively higher temporal resolution storage medium to a relatively lower temporal resolution storage medium.

13. A method according to claim 1, further comprising:

storing the parameter values based upon a discrete classification of the stored parameters, the temporal resolution of the stored parameters, or the total duration of storage time for said stored parameters.

14. A method according to claim 1, further comprising:

allocating available memory for the stored parameters based at least in part upon the temporal resolution assigned to each of the stored parameters.

15. A method according to claim 14, wherein the allocating further comprises automatic partitioning of available memory based upon the number of stored parameters or the temporal resolution of the stored parameters.

16. A method according to claim 1, wherein the temporary memory buffers comprise histogram memory units and wherein the histogram memory units are assigned a value or range of values of the stored parameters to store.

17. A method according to claim 16, wherein the histogram memory units are assigned at least one of: a discrete percentile range, a median storage value, an upper percentile value, a lower percentile value, as stored contents of said memory units.

18. A method according to claim 17, further comprising:

transferring the stored contents of some of the histogram memory units to the long-term memory buffers.

19. An apparatus for storing and processing physiological data in a medical recording device having continuous data collection and data storage of such data in multiple time-resolved tiers, comprising:

means for sampling one or more physiological signals at a selected sampling rate;

means for deriving physiological parameter values from the sampled signal;

means for storing the parameter values as they are determined in a temporary memory buffer for a predetermined storage interval;

means for determining a statistical aspect of the stored parameter values upon expiration of the storage interval; and

means for writing the statistical aspect to a long-term memory buffer.

20. An apparatus according to claim 19, wherein the long-term memory buffer comprises at least two long-term memory buffers, and further comprising:

means for designating a unique temporal resolution to one of the at least two long-term memory buffers.

21. An apparatus according to claim 20, wherein the temporal resolution of one long-term memory buffer is determined by the predetermined storage interval.

22. An apparatus according to claim 20, wherein the at least two long-term memory buffers comprise digital memory buffers.

23. An apparatus according to claim 19, wherein the one or more physiologic signals comprise: an electrical signal related to tissue impedance, a blood pressure sensor signal, an intracardiac pressure signal, a flow sensor signal, a temperature signal, an accelerometer signal, a biochemical sensor signal.

24. An apparatus according to claim 23, further comprising:

means for calculating a mathematical derivative, a mathematical integral or a percentile value of the one or more physiologic signals or the stored parameters.

25. A computer readable medium for storing instructions for storing and processing physiological data in a medical recording device having continuous data collection and data storage of such data in multiple time-resolved tiers, comprising:

instructions for sampling one or more physiological signals at a selected sampling rate;

instructions for deriving physiological parameter values from the sampled signal;

instructions for storing the parameter values as they are determined in a temporary memory buffer for a predetermined storage interval;

instructions for determining a statistical aspect of the stored parameter values upon expiration of the storage interval; and

instructions for writing the statistical aspect to a long-term memory buffer.

26. A medium according to claim 25, wherein the long-term memory buffer comprises at least two long-term memory buffers, and further comprising:

instructions for designating a unique temporal resolution to one of the at least two long-term memory buffers.

27. A medium according to claim 26, wherein the temporal resolution of one long-term memory buffer is determined by the predetermined storage interval.

28. A medium according to claim 26, wherein the at least two long-term memory buffers comprise digital memory buffers.

29. A medium according to claim 25, wherein the one or more physiologic signals comprise: an electrical signal related to tissue impedance, a blood pressure sensor signal, an intracardiac pressure signal, a flow sensor signal, a temperature signal, an accelerometer signal, a biochemical sensor signal.

30. A medium according to claim 29, further comprising:

instructions for calculating a mathematical derivative, a mathematical integral or a percentile value of the one or more physiologic signals or the stored parameters.